Sept. 1, 1953 N. A. BIVENS 2,650,446

RECOIL PAD

Filed Oct. 9, 1951

Fig. 1.

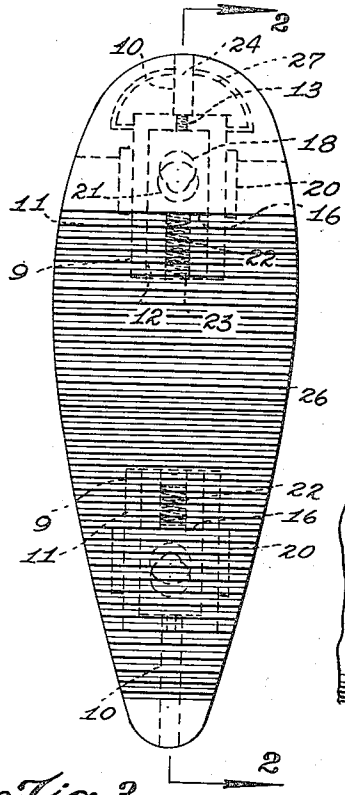


Fig. 2.

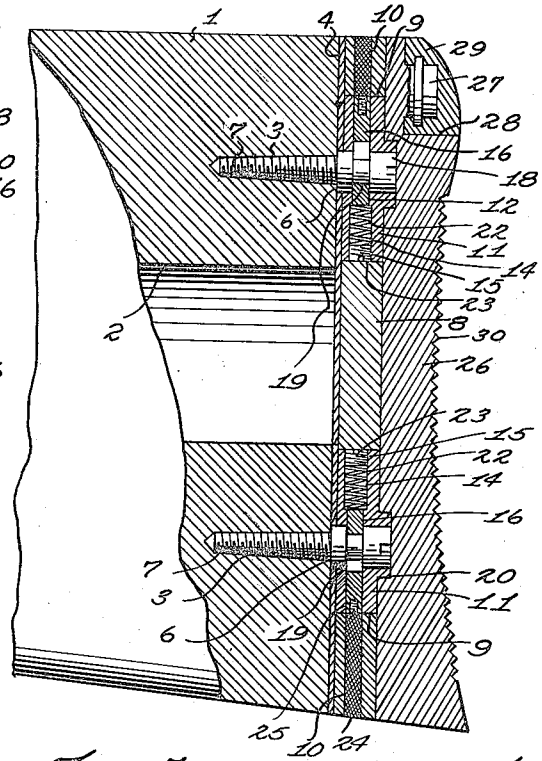


Fig. 3.

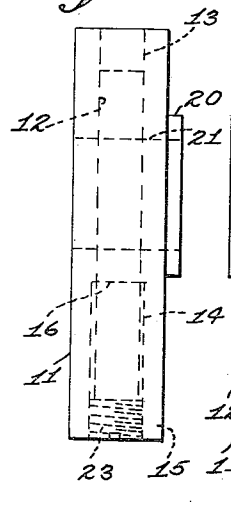


Fig. 4.

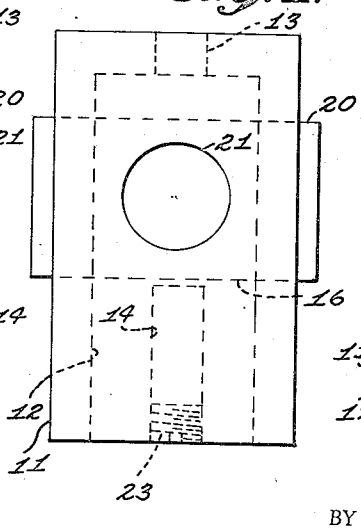
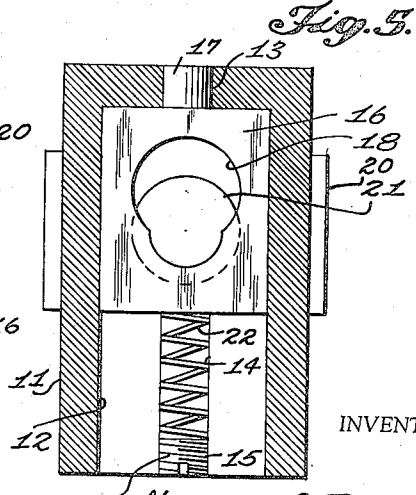


Fig. 5.



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Patented Sept. 1, 1953

2,650,446

UNITED STATES PATENT OFFICE

2,650,446

RECOIL PAD

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Application October 9, 1951, Serial No. 250,473

6 Claims. (Cl. 42—74)

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This invention relates to recoil pads for gun stocks. More particularly, the invention has reference to a recoil pad adapted to be readily attached to or detached from the gun stock of a rifle or other firearm.

To my knowledge, recoil pads as presently constructed have not been entirely satisfactory for one or more of various reasons. In some instances the recoil pad is incapable of being attached to or detached from the stock with desirable speed and ease. In other instances the recoil pad causes an undesirable amount of friction during the aiming of the weapon. In still other instances the recoil pad is attached to the stock by exteriorly disposed screws or similar fastening means, as a result of which not only is the general appearance of the device marred, but also the screw holes through which said fastening means pass tend to become frayed or torn when the pad is of rubber construction by reason of the repeated insection or removal of the screws.

The broad object of the present invention is to provide a recoil pad in which these deficiencies will not be present. More specifically, it is an object of the present invention to provide a recoil pad in which the means for attaching the pad to the gun stock are wholly concealed.

Another specific object of the invention is to provide a recoil pad capable of being swiftly attached to or detached from the stock, thus to provide ready access to the conventional stock trap.

Another important object is to provide a recoil pad of the type stated that will assure quick and effective sighting, and will prevent unnecessary friction against the clothing during the aiming of the fream.

Still another object is to provide a recoil pad which can be manufactured at relatively low cost, but which will be highly durable and efficient during the normal use thereof.

Referring to the drawings:

Figure 1 is a rear elevational view of a recoil pad formed in accordance with the present invention;

Figure 2 is a sectional view taken substantially on line 2—2 of Figure 1;

Figure 3 is an edge view of a retainer embodied in the invention;

Figure 4 is a face view of said retainer, as viewed from the left in Figure 3;

Figure 5 is a sectional view taken longitudinally through said retainer and showing in elevation a lock plate mounted in the retainer.

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Referring to the drawings in detail, a conventional stock 1 is provided with the usual stock trap 2 wherein may be stored cleaning equipment, sights and similar spare parts.

Formed in the stock above and below the stock trap 2 and spaced vertically of the stock are threaded, tapered, screw-receiving recesses 3 extending inwardly from the back face of the stock.

In accordance with the present invention, there is positioned against the rear face of the stock a spacer 4 formed to the outer configuration of the stock when viewed in rear elevation, the spacer 4 being formed of a suitable resilient material, such as neoprene rubber.

The spacer 4 constitutes a closure for the stock trap 2, and is formed with smooth walled openings 6 that register with the screw-receiving recesses 3 of the stock.

Extending through the openings 6 of the spacer 4 are tapered screws 7 that are permanently engaged threadably in the recesses 3.

A pad base 8, preferably formed of molded hard rubber material or the like, is formed to the outer configuration of the stock when viewed in rear elevation, and overlies the spacer 4, said pad base being of any suitable thickness. The spacer is permanently secured to the pad, so that whenever the pad base is removed, the spacer will be removed from the stock with the base, leaving only the screws 7 on the stock.

In the pad base I form, in vertically spaced relation, a pair of rectangular openings 9 through which the heads of the screws 3 may project, and smooth walled bores 10 communicate between the respective openings 9 and the top and bottom surfaces of the base.

The respective openings 9 are proportioned to receive identically formed retainers 11, the lower of which is inverted before insertion in its associated opening 9.

The retainer 11 is of a thickness corresponding to the thickness of the pad base, as readily seen from Figure 2, and is preferably formed of metal material, each of the retainers 11 being provided with a rectangular cavity 12 opening at one end of the retainer. Communicating between the other end of the cavity 12 and the other end of the retainer is a stud-receiving opening 13.

Formed in opposite walls of the cavity 12 are spring-receiving recesses 14 defining a spring well, the recesses being threaded, as at 15, for a part of their lengths.

A rectangular lock plate 16 shorter in length then the length of the cavity 12 is inserted within

said cavity and is slidable upwardly and downwardly therein, the lock plate 16 being formed integrally with a stud 17 receivable in the opening 13 of the retainer 11. The stud 17 is formed with a threaded opening for a purpose to be made presently apparent.

In the lock plate 16 I have provided a buttonhole opening 18 in which is disposed a reduced portion 19 formed upon the head of the screw 3.

I secure fixedly to the exterior surface of the retainer 11 in any suitable manner a rectangular flange plate 20, the opposite ends of which project beyond the opposite sides of the retainer 11, as readily seen in Figure 4.

Each retainer 11 is provided with side openings 21 communicating between the cavity 12 thereof and the front and rear surfaces of the retainer, said openings 21 in one position of the lock plate 16 being registrable with the buttonhole slot 18 of the lock plate. The associated flange plate 20 is provided with an opening which is in full registration with the openings 21 of the retainer, and said registering openings of the retainer and flange plate receive the full circumference portions of the screw head, this construction being best noted from Figure 2.

After the lock plate 16 has been slidably inserted in the retainer 11, a spring 22 is inserted in the spring well, and is retained therein by a set screw 23 that is threadably engaged in the tapped portion 15 of the spring well.

The spring 22 exerts continuous pressure upwardly upon lock plate 16, so as to hold the lock plate 16 normally in the position thereof illustrated in Figure 5.

It will thus be apparent that in the normal position of the lock plate 16, the reduced-width portion of the buttonhole openings 18 thereof will engage the reduced portions 19 of the screws, thus to hold the pad base releasably assembled with the gun stock.

For the purpose of providing a release for the pad base, whereby it may be detached from the gun stock with speed and facility, lock-release pins 24 are provided that are extended through the smooth walled bores 10 of the retainers 11, and these pins are formed at their inner ends with reduced threaded extensions that are threadably engageable in the tapped openings of the studs 17.

Thus, whenever it is desired to release the pad base from engagement with the gun stock, it is necessary merely to depress the respective pins 24, which depression can be speedily accomplished by the use of a match stick or other small object.

A recoil pad member 26 is provided that is formed to the same outer configuration as the pad base, and overlies the pad base. The pad member 26 preferably is of molded rubber construction, and at its upper end has a crescent-shaped mold projection 27 extended into a cut-away portion 28 of the pad member. The projection 27 is embedded permanently in a smooth surfaced heel plate 29 of hard rubber, metal or like material.

Formed upon the outer surface of the pad member 26 and extended substantially from top to bottom of said pad member is a plurality of transversely disposed ribs 30 that impart to the back surface of the pad member the roughened, friction-producing surface that will have the characteristic of holding the gun stock securely in position against the clothing during the actual firing of the weapon.

However, the provision of the smooth surfaced heel plate 29 permits the stock to be shifted relative to the clothing of the user during the actual aiming or sighting of the weapon, it being understood that at this time the serrated or roughened portion of the pad member would be held slightly away from the clothing. As soon as the aiming or sighting operation is completed, the weapon is held firmly against the clothing, and the roughened portion of the recoil pad member will prevent undesirable shifting of the weapon from its properly aimed position.

Important characteristics and advantages of the construction illustrated and described may now be readily noted. The construction is such that there are no exteriorly disposed screws or similar fastening means, said fastening means being wholly concealed and hidden. However, the recoil pad is capable of being attached to or detached from the gun stock with complete facility through the ready operation of the lock-release pins 24. In this way swift access is provided to the ordinary stock trap, and the construction has the further advantage of permitting ready interchangeability of recoil pads, so that recoil pads of selective thicknesses can be used as desired.

It is further believed of importance that the recoil pad formed in accordance with the present invention is, I believe, capable of being manufactured at a relatively low cost, and while efficiently discharging the functions described above, will not mar in any way the appearance of the weapon and will, in fact, increase the over-all attractiveness of the weapon, this being an important factor in providing a commercially feasible recoil pad.

What is claimed is:

1. In a recoil pad for attachment to a gun stock, a pad base proportioned to overlie the end face of a stock; a lock plate movably mounted in said base; means yieldably biasing said lock plate to one position within the base; means for shifting said plate to another position within the base against the action of the first-named means; fastening elements extending into said stock and engaged with the lock plate in the first-named position of the lock plate, whereby to hold the pad base releasably assembled with the stock, said elements being disengaged from the lock plate in the second position of the lock plate for removal of the base from the stock; and a pad member secured to and overlying said base.

2. In a recoil pad for attachment to the end face of a gun stock, a pad base proportioned to overlie said end face; retainers mounted in said pad base, said retainers having cavities formed therein; lock plates slidably mounted in the respective cavities; yielding means carried by said retainers and normally biasing the lock plates to one position within the retainers; release means slidably mounted in the base and engaging said lock plates for shifting of the lock plates to another position within the retainers against the action of said first-named means; fastening elements extending into said stock and projecting through the cavities of the retainers, said fastening elements being engageable with the lock plates in the first-named position of the lock plates to releasably engage the pad base with said stock, said lock plates being disengaged from the fastening elements in the second-named position of the lock plates for separation of the pad base from the stock; and a pad member fixedly secured to and overlying the pad base, said pad

member being proportioned to conceal the retainers, lock plates and fastening elements.

3. In a recoil pad for a gun stock, a pad base proportioned to the outer configuration of and overlying an end face of said stock, said pad base being formed with spaced openings; retainers snugly fitted in said openings, said retainers having elongated cavities formed therein; lock plates slidably mounted in the respective cavities, said lock plates having buttonhole openings, the retainers having side openings in communication with the cavities, the side openings and the buttonhole openings being relatively offset in one position of the lock plates; springs mounted in said retainers and yieldably biasing the lock plates to said one position; lock-release pins slidably mounted in said pad base and engaged with the lock plates for shifting the lock plates against the action of the springs to a second position of the lock plates in which the side openings and buttonhole openings are in register; screws threaded into the gun stock, the heads of the screws projecting through said openings of the retainers and cavities of the lock plates and having reduced portions engageable within the buttonhole openings, said screws holding the pad base assembled with the gun stock in said one position of the lock plates and disengaging the pad base from the gun stock in the second position of the lock plates; a recoil pad member proportioned to overlie said pad base and concealing the retainers, lock plates and screws, said pad member having a recess at its upper end; and a heel plate fixedly mounted in said recess, said heel plate being of smooth-surfaced formation, the surface of the pad member disposed below the heel plate being roughened to cooperate with the heel plate in providing vertically spaced friction-reducing surfaces at the outer end of the recoil pad.

4. In a recoil pad for attachment to a gun stock, a pad base proportioned to overlie the end face of a stock; a lock plate slidably mounted in said base; means yieldably biasing said lock plate slidably to one position within the base; a release pin connected to the lock plate and having one end exposed for manual depression by a user, said pin being arranged opposite said means for shifting the lock plate to another position within the base against the action of said means on depression of the pin by a user; fastening elements extending into said stock and engaged with the lock plate in the first-named position of the lock plate, whereby to hold the pad base releasably assembled with the stock, said elements being disengaged from the lock plate in the second position of the lock plate for removal of the base from the stock; and a pad member secured to and overlying said base.

5. In a recoil pad for attachment to the end face of a gun stock, a pad base proportioned to overlie said end face; retainers mounted in said pad base, said retainers having cavities formed

therein; lock plates slidably mounted in the respective cavities; yielding means carried by said retainers and normally biasing the lock plates to one position within the retainers; lock-release pins slidably mounted in the base and fixedly connected to the lock plates, said pins respectively having one end exposed for manual depression of the pins by a user, the pins being arranged opposite said yielding means for shifting of the lock plates to another position within the retainers against the action of said yielding means, responsive to depression of the pins; fastening elements extending into said stock and projecting through the cavities of the retainers, said fastening elements being engageable with the lock plates in the first-named position of the lock plates to releasably engage the pad base with said stock, the lock plates being disengaged from the fastening elements in the second-named position of the lock plates for separation of the pad base from the stock; and a pad member fixedly secured to and overlying the pad base, said pad member being proportioned to conceal the retainers, lock plates, and fastening elements.

6. In a recoil pad for a gun stock, a pad base proportioned to the outer configuration of and overlying an end face of said stock, said pad base being formed with spaced openings; retainers snugly fitted in said openings, said retainers having elongated cavities formed therein; lock plates slidably mounted in the respective cavities, said lock plates having buttonhole openings, the retainers having side openings in communication with the cavities, the side openings and the buttonhole openings being relatively offset in one position of the lock plates; springs mounted in said retainers and yieldably biasing the lock plates to said one position; lock-release pins slidably mounted in said pad base and engaged with the lock plates for shifting the lock plates against the action of the springs to a second position of the lock plates in which the side openings and buttonhole openings are in register; screws threaded into the gun stock, the heads of the screws projecting through said openings of the retainers and cavities of the lock plates and having reduced portions engageable within the buttonhole openings, said screws holding the pad base assembled with the gun stock in said one position of the lock plates and disengaging the pad base from the gun stock in the second position of the lock plates; and a recoil pad member proportioned to overlie said pad base and concealing the retainers, lock plates, and screws.

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